American FRUIT GROWER

SEPTEMBER 1946

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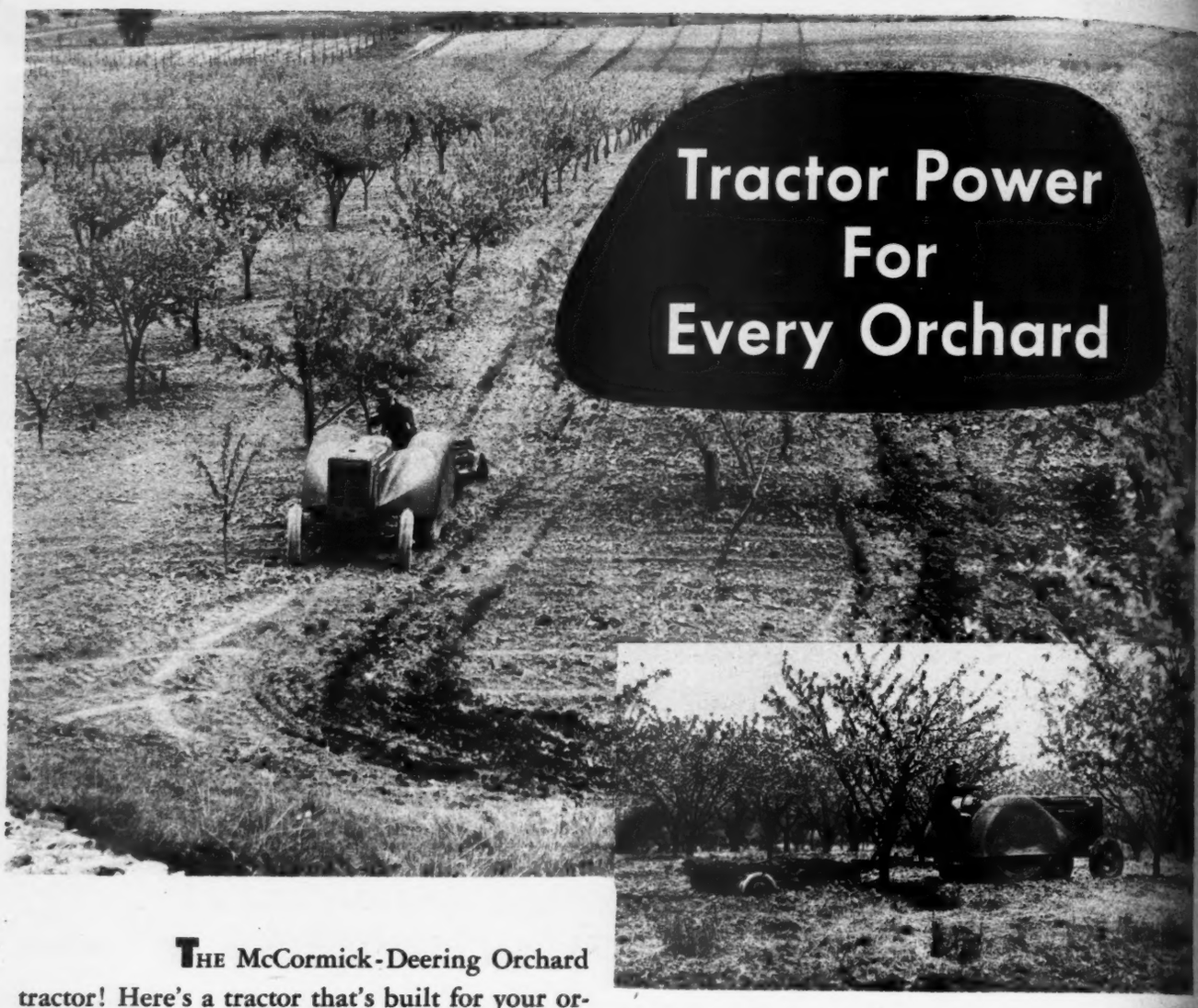

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SEPTEMBER 1946
VOL. 67 No. 3

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August 13, 1945.
Do we like John Deere tractors? Indeed, we do! We own three Model "A's", one eleven years old, one eight years old, and one we purchased this spring. Repairs are hardly worth mentioning. I don't believe we spent over $50 on all three tractors, and their total service adds up to about twenty years.—D. D. Denman, Cortland, Ohio.

August 30, 1945.
In April, 1937, I purchased a Model "B" John Deere Tractor. My total repair bill during all this time amounted to $2.00.—Paul F. Hinze, Shiner, Texas.

June 8, 1945.
I purchased my Model "D" in the fall of 1924 and have used it every season since. During this long life, I have spent in the neighborhood of $150 for repairs.—Charles A. Kohns, Capac, Michigan.

December 6, 1945.
I bought a Model "B" in December, 1939. Just had it in the shop for the first time and the overhauling expense was $25.22, which is all I have had on this tractor in 6 years of operation. —Joe Yostmayer, Rush Hill, Missouri.

November 19, 1945.
My John Deere Orchard Tractor is 11 years old. I have spent less than $60 for repairs in all that time and the tractor runs as well as it did the first year.—J. C. Knoke, Modesto, California.

August 22, 1945.
I purchased my John Deere Model "A" Tractor February, 1935. I have farmed an average of 200 acres per year. This year, however, it has covered 258 acres. During those years, the entire cost of upkeep will not exceed $300, including a paint job.— Curtis W. Shafer, Bridgeport, Indiana

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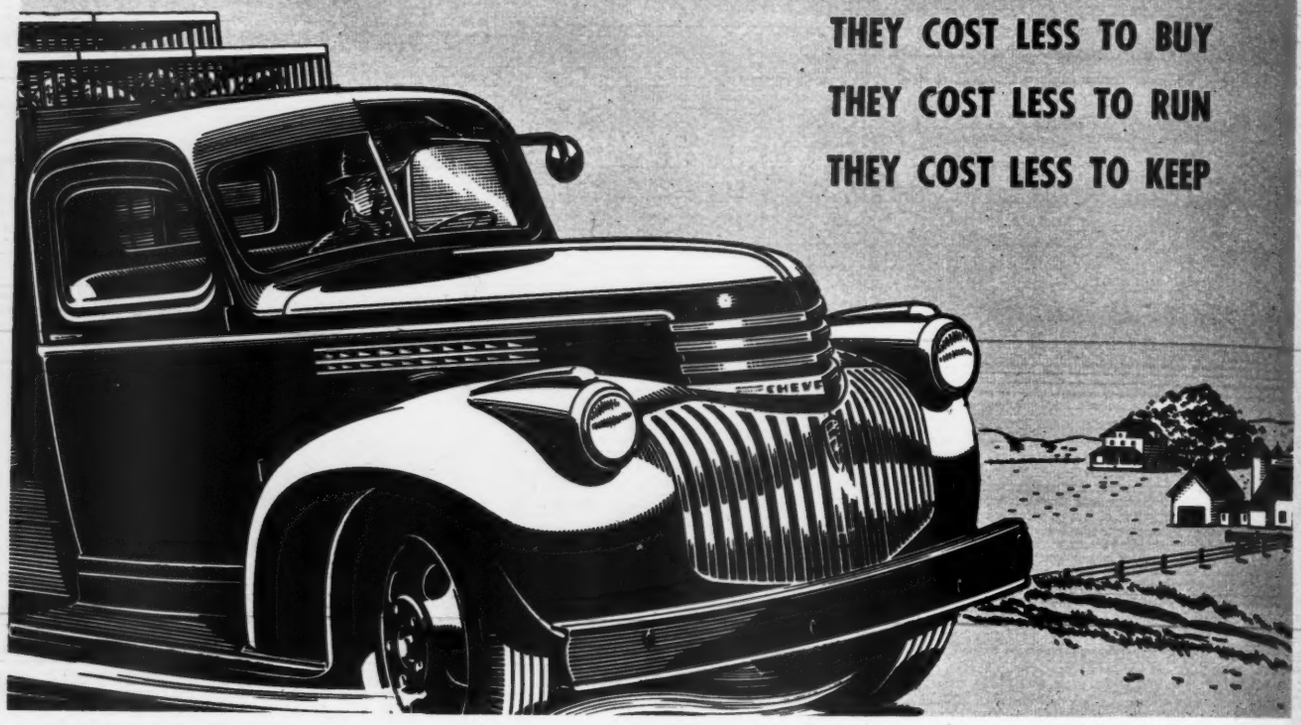

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THEY COST LESS TO KEEP

THE HYPOID REAR AXLE IS FIVE TIMES AS STRONG AS THE SPIRAL BEVEL GEAR FORMERLY USED

The hypoid gear rear axle has proved greatly superior to the ordinary bevel gear drive used formerly. Not only is it much stronger and more durable, but unit pressures are lower and operation is more silent.

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LETTERS TO THE EDITOR

Insect Attacks Pears

Dear Sir:

I am a small fruit grower in the heart of Texas. I have a pear orchard which bears heavy every year. But as the pears start to ripen, a weevil or insect similar eats into the side; often it never reaches the core before the pear falls to the ground.

Is there any spray that can be successfully and safely used to combat this insect?

I am also interested in wax emulsions for keeping fruit. I would like to know where I can get it. I will greatly appreciate this information.

Richard Springs, Tex. Robert Callender

It is impossible for me to tell from your letter what insect is attacking your pears. If it is the weevil, which I am inclined to doubt, it can be controlled with DDT. I would try DDT on this pest. You will not hurt the trees, and it should give you the desired results, although DDT will not control all insects.

I would try about 3 pounds of DDT to 100 gallons. This should give you some degree of control. Follow your first application in about two weeks with another one.

Regarding wax emulsions for improving keeping qualities of your fruit, I would suggest you write to the following companies:

Brogdex Co., Pomona, Cal.
Dow Chemical Co., Midland, Mich.
Food Machinery Corp., Riverside, Cal.
Wilbur White Div., Franklin Research Co., Phila., Pa.—Ed.

Deer Eat Leaves of Young Trees

Dear Editor:

Will you kindly tell me what I am to do to keep deer from eating all the leaves off my young fruit trees? Thanking you kindly.

San Francisco, Cal. Mrs. A. Calderom

In some locations deer do considerable damage to young stock, and I believe the only way you can protect your trees is to fence your orchard to keep the deer out. There is no other protective measure that we know of.—Ed.

Blakemore Strawberry

Dear Sir:

Have just received my July issue of your magazine, and found on page 21 a picture of the Blakemore Strawberry.

Can you tell me where, if any place, I could buy a few of these plants? They appear to be a very good producing crop.

Also, is it possible to set out such plants as roses, raspberries, and other small fruit in the fall?

Would sawdust be harmful to strawberries? I want to put something between the plants and rows to keep the fruit off the ground, and then there is not so much loss from rotting, especially if it is a wet year like the last, when I lost nearly a third of my crop.

Belmond, Iowa Obert C. Thompson

Most of the nurseries can supply the Blakemore strawberry.

I see no reason why sawdust would not be a good mulch around strawberries. Some growers are making an outstanding success with everbearers using this system.

There is no reason why plants cannot be set out in the fall. A great many fruit growers set their stock in the fall of the year. The disadvantage of fall planting is that the tender plants might not be able to survive a severe winter.—Ed.

Japanese Beetle

Dear Sirs:

Please inform me what to do for Japanese beetles on all my fruit trees. They are just ruining them.

What would DDT do? Or would it kill my trees? Thank you for any information you can give me.

Hyattsville, Md. Mrs. Myrtle Roberts

The beetles are certainly on a rampage this season—especially in the East.

DDT will give you some control of the Japanese beetle, and you will not injure your trees with the DDT. I would try 3 pounds of DDT to 100 gallons. That is, the DDT compound has 25% actual DDT in it. It may be that you can buy 50% DDT, and you can cut the proportions down accordingly.—Ed.

Oriental Fruit Moth

Gentlemen:

I take your magazine, and I have a few peach trees in my back yard, and one nectarine tree. I have been reading your magazine and looking for some way to get rid of the peach moth. They are just eating the ends off every limb on our young trees.

I haven't found anything in the magazine. Could you advise me how to care for the trees and stop this moth?

I thank you for any advice you may give me.

Norwood, Ohio Mrs. Herbert Ratcliff

In the past it has been almost impossible to control the oriental fruit moth which is attacking the ends of the limbs of your peach trees. Today, this moth can be controlled by the use of DDT, and approximately 2 pounds of DDT per hundred gallons of water will control this moth. However, you will require a series of sprays every two weeks over a period of two months, early in the year.

Most of your damage has been done, but if it is a severe infestation, I would suggest that you apply at least one spray of DDT.

By 2 pounds of DDT per 100 gallons of water, I mean pure DDT. If you buy 50% DDT this will require 4 pounds per hundred instead of 2 pounds.—Ed.

Bulletins on Fruit

Dear Sir:

Please tell me where I can get a book on grafting walnuts, grapes, apples and prunes.

Nupa, California Manuel Barboza

The literature on grafting is scattered through a number of horticultural publications on propagation.

For your immediate use, I would suggest that you write the Dept. of Horticulture, Univ. of Cal., Berkeley, Cal., for information on the subject.

They would apply to your situation more than a general book on the subject. These bulletins are free to residents of the state.—Ed.

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For complete information write for Bulletin AFG-96

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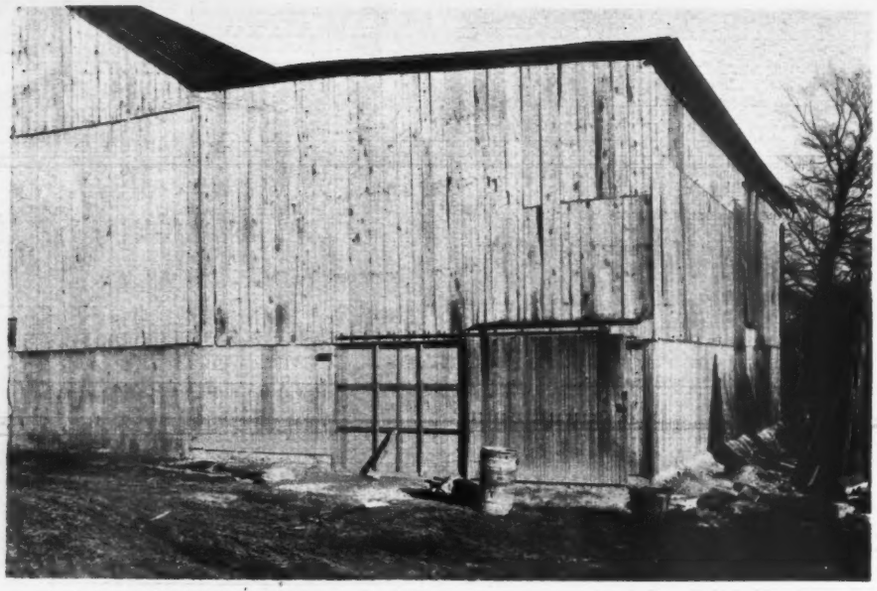


Example of a barn cheaply made-over for storage.

REMODELING OLD BUILDINGS FOR COLD STORAGE UNITS

Economical If Building Was Soundly Built

By DONALD COMIN

Ohio Agricultural Experiment Station

MAKING over existing farm structures for use as cold storages is often an economical procedure providing the structure is sound in foundation and supporting timbers and does not require too much replacement of walls, partitions, ceiling and roof. It should be pointed out that one of the weaknesses of barns or barn basements is their limited head room for cold storage use. Where 12 and 14 foot room heights are recommended for storages, bank barns frequently have only 8 or 9 feet in the clear with beams and sometimes posts to still further reduce the usable space. This means a disproportionately large area of wall, floor and ceiling to be insulated for the useful storage volume available.

The first step then in remodeling a structure for cold storage is to excavate as much as is permissible for greater ceiling height. Excavation can usually extend down to the wall footer or foundation. It is then necessary to insulate the floor with a 3-inch concrete base, the equivalent of 2 to 4 inches of cork insulation and a 2 to 3 inch topping of concrete for a wearing surface.

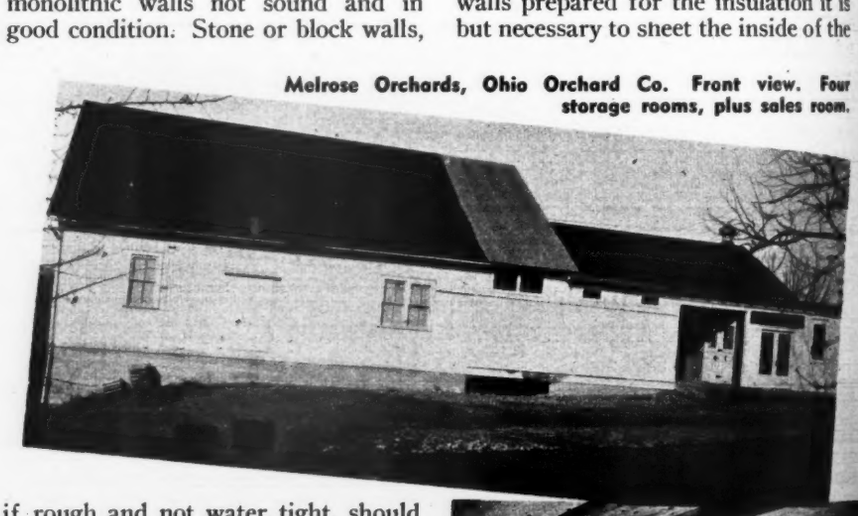
Vermiculite, ground cork or sawdust may be mixed with cement to make the insulated portion of the floor. Details of floor construction may be obtained from the Ohio Agricultural Experiment Station, Department of Horticulture, Publication No. 61 (Revised).

The second step in remodeling is to strengthen or replace all timbers and monolithic walls not sound and in good condition. Stone or block walls, if rough and not water tight, should be given a plaster or mortar coating at least ¾ inch thick to provide a smooth and reasonably tight surface which may then be painted with an asphalt emulsion for vapor proofing. Since all outside cold storage walls must be vapor-proofed on the outside or inside surfaces before insulation is applied and the inside wall constructed, this should be done in time for two coats to dry before installing the insulation. Where wood walls are on the outside, it is necessary to either line the storage wall with vapor-proof paper from the inside or remove the outside siding and apply the paper to the studs and re-side. It is very important that this be done as moisture will certainly penetrate non-vapor proofed walls on its way to the refrigeration coils and will condense in the insulation and reduce its effectiveness. This paper vapor seal also acts as an air infiltration seal and usually boards are never sufficiently tight over a period of time to stop air infiltration. If the paper must be applied from the inside of the building, bring it around over each stud and make it continuous with well-lapped joints. This is inferior to placing it on the outside of the studs since placing paper around studs and bracing timbers promotes some moisture condensation between the paper and the studs which is not too desirable.

Now that the inside of the outside wall has been vapor-proofed with asphalt emulsion or vapor-proof paper, the next step is to nail furring strips to the diagonal bracing members (not necessary where studs are in the wall) to bring the wall thickness to 6 inches. If an occasional post in the wall is thicker than 6 inches the insulation may be brought up to these posts and not around them, although a better job of insulation is obtained when the insulation is carried out and around such posts in walls.

Now with the inside of outside walls prepared for the insulation it is but necessary to sheet the inside of the

Melrose Orchards, Ohio Orchard Co. Front view. Four storage rooms, plus sales room.



Storage room showing air shaft serving basement and first floor storage rooms.

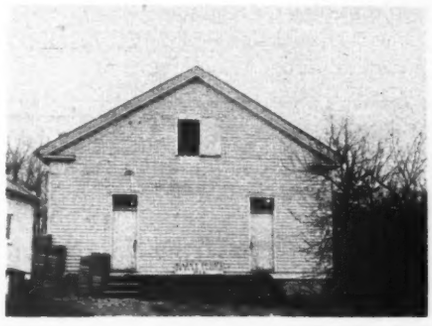
walls with wood or other material, starting at the bottom and after 3 feet has been applied the loose-fill type of insulation such as ground cork, Palco Wool or Vermiculite is placed in the 3 foot section and the procedure repeated until the last board at the ceiling is reached. This last board is placed at an angle to the wall, the insulation placed, then the board is pushed into place and secured with wood screws so that it may be readily removed for adding more insulation should any settling occur. Paper may be used just under the sheathing on the inside but it must not be vaporproof paper but only common building paper such as Slater's felt. It does aid in keeping fine insulation materials from sifting through the cracks between unmatched boards if they are used as inside sheathing. When it is possible to have a discontinuous plate across the top of the studs upon which the ceiling joists may bear then the insulation in the ceiling joists may be made continuous with that in the walls and settling of insulation in the walls is thus automatically provided for. Loose-fill insulation has been assumed since it is economical for remodeling structures and easily applied.

There is one point where it is necessary to extend the wall out into the storage even though it reduces the ease of stacking crates against the walls. Where wall timbers or studs rest on a stone or other monolithic foundation wall exposed above the floor it is absolutely necessary to construct the wall and inside sheathing down and around the stone wall as it is insufficient insulation in itself even though it may be banked with earth on the outside. The insulation must be made continuous all around the inside of the storage room. At the foundation for any center supporting posts is the only exception to this rule.

The only remaining portion of the storage left to insulate is the ceiling. Here the same rule applies; i.e., use a vapor seal on the outside, that is, on top of the ceiling joists not on their lower side. If the floor above is in place and it is not feasible to remove it, the vaporproof paper must be applied around each joist under the flooring and so on across the entire ceiling. Providing the floor above is not tight (unmatched flooring) it is sometimes possible to dispense with the paper as the insulation can then dry out during the summer through the loose upper floor. The space between the joists should then be filled with the loose-fill insulation to a thickness of 8 inches. This is accomplished by sheathing a 3 foot section across the entire ceiling, placing the insulation in by hand and repeating the operation until the entire ceiling is covered. It is much easier if the insulation can be applied from above before a floor is laid. It may be necessary to apply at least the last portion of the insulation at one side, from above. The under part of the ceiling should be smooth and offer as little obstruction to air movement as possible. When it is necessary to have supporting beams exposed to the storage room, the blower-type cooling unit must be placed to blow in the direction of the beams, not against them.

Aplink Orchards, Canton, Ohio. Large barn made-over for storage.

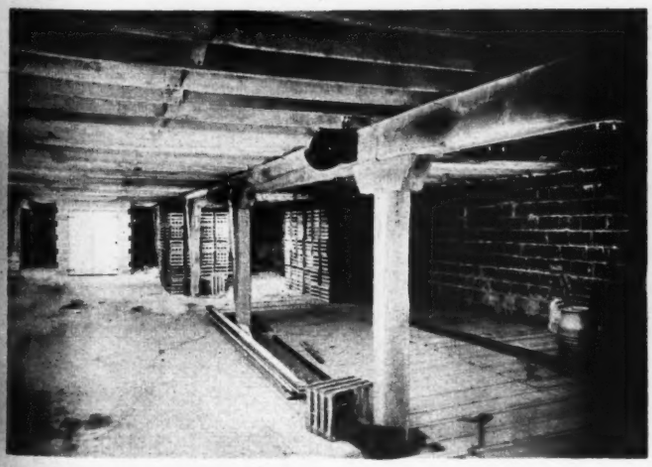
Melrose Orchards of Ohio Orchard Co. Made-over building.



Twin Oak Orchards, Mt. Vernon, Ohio. An excellent use for an old school building.

Usually one 4 by 7 foot refrigerator door is sufficient and all other openings in the original structure should be closed and insulated as the walls are completed. One 2 by 2 foot refrigerator door placed in an opening

(Continued on page 18)



Kefaber Storage. Note low ceiling, making it easy to pile crates.

Ochs Storage—new large storage, showing large doors for trucking produce in and out.

IF YOU PLAN TO BUILD A COLD STORAGE

Here Are Suggestions About Refrigeration and Equipment

By CLARENCE E. BAKER

Purdue University Agricultural Experiment Station

PRESENT indications point to a decided swing toward grower-owned refrigerated fruit storages as refrigeration machinery and building materials become available. Many growers had the questions under consideration before war time restrictions were imposed. Others have decided that they must have a refrigerated storage if they are to keep their business up to date.

The various refrigeration systems available at present and the modifications of these systems made by different companies in search of greater efficiency are confusing to fruit growers who have had little experience with refrigeration machinery. As other companies enter the field with more variations of cooling equipment the confusion may increase.

No fruit grower should contemplate building a refrigerated storage without carefully studying the problem in terms of his own business enterprise. If, after a careful analysis of his storage and marketing practices, he decides that he should own and operate his own storage he should learn something of the principles and the mechanics of refrigeration systems. He should become sufficiently familiar with the functions of the compressor, the condenser and the evaporator to know the part that each plays in the refrigeration cycle, so that he may talk the language of the salesmen and refrigeration engineers with whom he must transact business.

Of the storages already in operation on fruit farms many have failed to give as good results as the owners have a right to expect. Usually a little more forethought would have made it possible to avoid some simple defect or weak point in design that limits the usefulness of the plant. Probably the most common and the most serious mistake made in apple storage installations is the failure to provide optimum conditions of relative humidity for the fruit. Favorable storage conditions for holding apples in the conventional manner for the maximum season requires a temperature of 33°-35° F. and a relative humidity of at least 85% and preferably 87 to 90%. Some varieties, such as Grimes and Jonathan, prefer a temperature as high as 36°. Too frequently refrigerated storages fail to furnish the desirable temperature conditions but even more often they fail to meet the moisture requirements. When the relative humidity of the storage air is low the fruit loses moisture and becomes shriveled. This will occur even if the temperature requirements are well met. By 85% relative humidity we mean that the air within the storage room carries 85% of the moisture it would if completely saturated at that particular temperature.

The reason for poor moisture conditions often results from improper engineering design. The number of fruit storages in comparison with storages for other commodities is so small that the difference in requirements of fruit storages from other types of installations is not always recognized. The mistake that most often leads to inadequate moisture is the failure to provide sufficient evaporator surface. The evaporator is the series of pipes or coils in which the refrigerant evaporates or changes from a liquid to a gaseous form. In a direct expansion system the evaporator is the series of pipes on the ceiling or walls that become cold when the system is operating. Evaporators may take the form of fin coils or plate coils. In blower types of cooling units the evaporator is the piping within the unit which contains the refrigerant and about which the air is circulated in the cooling process. These units may be the so-called dry coil units or the wet coil type. In the latter type a brine spray falls over the cooling coils and the air passes not only over the coils, but through the cold spray.

The air thus cooled by contact with the evaporator surface is circulated about the produce in the room where it removes heat and carries this heat back to the evaporator where it is in turn absorbed by the cold surface of the evaporator and eventually removed from the room. In systems without fans or blowers the air moves by gravity, the warmer air tending to rise and the cold air settling, due to the difference in weight of an equal volume of warm

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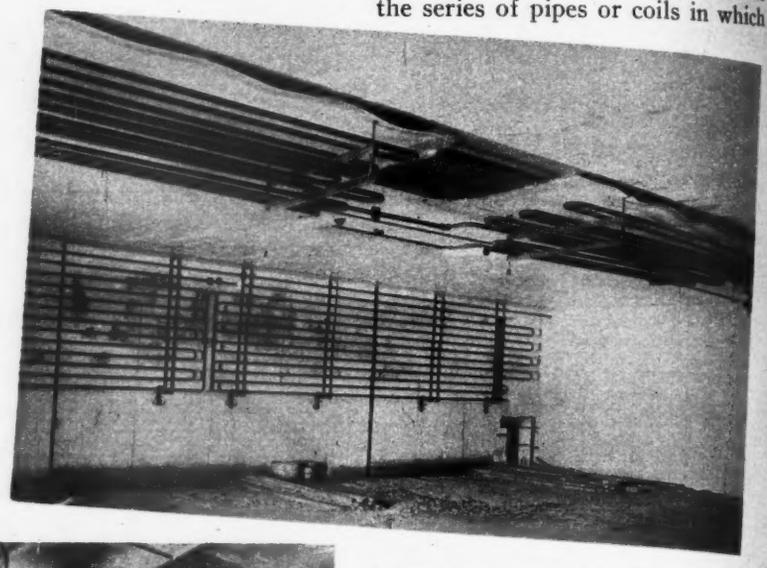
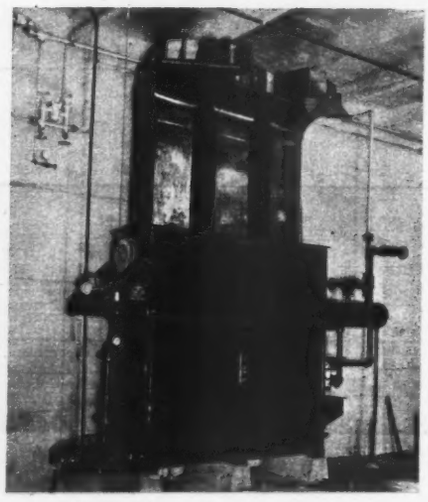


A direct expansion system. The cooling coils on walls and ceilings constitute the evaporator. W. C. Reed & Son, Vincennes, Ind.



An air cooling unit of the wet coil or brine spray type. W. C. Reed & Son.

Left—The Author and Dr. Pieniazek with the electric fan used to speed up dissipation of the gas to secure a rapid concentration. Dr. Pieniazek is breaking up the dry ice with a hatchet.

Right—Experimental chamber used to determine the lethal concentration needed to kill rodents. All photographs on this page courtesy of the Providence Sunday Journal.

RAT CONTROL IN COLD STORAGE

By E. P. CHRISTOPHER
Rhode Island State College

EACH year rats and mice cause considerable damage to fruit in storage. Control by cats, traps, poison bait, and more recently by methyl bromide (AMERICAN FRUIT GROWER, 1945) has been tried with varying success. In the course of work aimed at controlling apple scald by means of carbon dioxide, Dr. S. A. Pieniazek and the writer developed a method of controlling these rodents using Dry Ice to secure sufficient concentrations of carbon dioxide.

Carbon dioxide is the gas given off in respiration by man and animals and is not poisonous in the sense that many gases such as methyl bromide, carbon monoxide, etc., are poisonous. However, high concentrations of the gas do reduce the oxygen supply and result in very rapid breathing followed by a slowing of respiration to the point of death. Exposure to rather high concentrations of the gas results in a temporary loss of strength, a smarting of the eyes, and possibly a headache. I mention these symptoms to point out two things: first, that ample warning is given, and second, no lasting injurious effects are sustained if reasonable precautions are taken.

The wire cage containing rodents which was used in various parts of the storage room when commercial trials were carried on.

Dr. Pieniazek handling the mice used in the experimental work.

Carbon dioxide is a natural product of the respiration of fruit and the concentrations and exposures necessary to kill rodents will not injure the fruits. In fact, much longer exposures to much higher concentrations for scald control have not caused damage.

Carbon dioxide may be secured in the form of Dry Ice at reasonable cost and this seems to be the best source of supply. Currently the price is about 3c per pound. The only equipment necessary is one or more household fans to cause prompt distribution of the gas and to prevent stratification.

Our experiments were carried on with white mice and Norwegian rats in small chambers and in a storage room of approximately 8500 cubic feet capacity. As was found in the work with methyl bromide, the females are easier to kill than the males and rats took longer exposure than mice. We also found that rodents which were exposed to the gas treatment after being in a cold room for a week or so were harder to kill than those which had just come in from outdoors. Apparently, when the animal had to adjust to both gas and cold, its resistance was less.

Our experiments showed that even the toughest old rat could be killed by an exposure of six hours to 20% carbon dioxide. We found that this concentration could be secured and maintained in our size storage room

(Continued on page 24)

A box of apples with more or less typical rodent damage.

Photo from Appalachian Apple Service

NATIONWIDE FRUITS

APPLES

DDT Residue Tolerance

Information gathered about DDT residue tolerance by the National Apple Institute was published in a recent bulletin.

A large percentage of the growers who used DDT last season obtained residue analyses, and checked them against their spray programs. These were studied and the results compared by state and federal entomologists with their own findings.

On the basis of that experience it became clear that the tolerance of 7 ppm allows sufficient latitude to permit DDT spray programs adequate for most situations. Earlier fears that two DDT covers might be the safe limit were unfounded. Other factors and considerations have contributed at least equally to the calculation of the optimum strength and number of applications advised for use in 1946. The tolerance is not high enough to allow straight DDT control under some conditions of second brood activity.

The possible toxicity of DDT residue on apples is the subject of continued research at the Beltsville Research Center. Some kind of chemical decomposition apparently takes place, with some growers reporting a decided tapering off in effect on codling moth after ten days. Exposure to bright sunlight causes loss of toxicity to some extent.

The bulletin points out that it is not attempting to point out the comparative value of various spray programs, but is interested only in the aspects pertaining to saleability of fruit.

The toxicity of DDT has long been one of the questions asked by growers. Since the purpose is confined to the saleability aspects, Dr. F. C. Bishopp, Asst. Chief, Bureau of Entomology and Plant Quarantine, has given permission to quote him as follows:

"It should be pointed out that the circumstances under which DDT has been developed have led to the most critical examination of the toxicology of DDT to which any insecticide has been subjected. Furthermore because of the publicity given to DDT and the precautions that should attend its use the public is prone to attribute it to any illness or other ill effects that can be associated even remotely with its use."

False Reports of Poisoning

Dr. Bishopp goes on to say that investigations into several cases of human illness attributed to DDT have been found erroneous upon investigation by Dr. Paul A. Neal of the National Institute of Health.

BERRIES

Vitamin C in Strawberries

Experiments at the Geneva Experiment Station in New York show that strawberries are a much richer source of vitamin C than any other fruit commonly grown in the area.

Three-fourths of a cup of freshly picked strawberries supply the daily allowance of vitamin C recommended by the National Research Council.

A total of 308 varieties and seedlings from variety crosses growing on Station grounds in 1945 were analyzed for vitamin C content, and displayed a range from 41 to 81 milli-

grams per 100 grams of fruit. The average for 37 commonly grown varieties was 62 milligrams per 100 grams of fruit.

Station workers say that to appreciate the true value of strawberries as a source of vitamin C, they should be compared with fruit usually recommended for that purpose. For example, workers state, a 100-milligram serving of oranges supplies from 35 to 55 milligrams of the vitamin; grapefruit from 35 to 40 milligrams; and tomatoes, 15 to 30 milligrams. 100 milligrams of fruit is about equal to 3½ ounces.

Vitamin C potency is directly related to seasonal and climatic conditions, and sunlight intensity has an effect on it, the Station scientists say. Strawberries grown in the shade have less vitamin C than those produced in direct sunlight, and cloudy weather reduces the vitamin C potency by cutting off the direct rays of the sun. Freezing preservation of strawberries has no material effect on the vitamin C content, even after six months of freezing storage.

Among varieties tested, Catskill stood at the head of the list with 81 milligrams per 100 grams of fruit, Dresden had 72 milligrams, Sprakle had 65, Fairfax had 62, and Howard tested 54 milligrams.

An armful of vitamin C!

U.S.D.A. photo by Forsythe

PEACHES

Yellow-Green Foliage

There has been so much discussion about the causes of the unusual yellow-green color of peach foliage that New Jersey horticulturists have prepared a list of some of the common causes. The list was published in the New Jersey Horticultural Record by M. A. Blake and O. W. Davidson.

The list follows:

A deficiency of available nitrogen in the soil.

A deficiency of available phosphorus in the soil.

A compound deficiency of phosphorus and potassium in the soil.

Excessive acidity of the soil.

A lack of aeration in the soil due to inadequate drainage.

A deficiency of soil moisture.

Inability of the tree to move nitrogen from roots to top due to cold weather.

Low temperatures interference with functioning and chlorophyll formation in the leaves.

Partial girdling by borers, winter injury, and other factors.

Infection by virus diseases such as little peach or yellows.

Bacterial leaf spot.

Spray injuries.

Marked changes in growing conditions: When peach trees grow very slowly in early spring because of lack of fertility, too low temperatures, or any cause, the first leaves which develop tend to mature and harden quickly. If a rapid and sudden increase in growth then follows, the earlier leaves which formed turn yellow and drop.

It is interesting to note that root injuries suffered in the hurricane last fall in New Jersey also caused yellow-green leaves to develop in the area hit by the hurricane.

NUTS

Walnuts Check Fruit Trees

Purdue University horticulturists have been receiving inquiries about the effect of walnut trees on adjacent trees. Growers have noticed walnut trees growing in the orchard seemingly have a detrimental effect on the fruit trees.

"There is no question but that walnut trees seriously effect the growth of adjacent trees as well as the production of annual crops in the adjacent area," declares Prof. C. L. Burkholder, assistant chief of horticulture at Purdue. If fruit trees are approximately 100 feet from the walnut trees there is little likelihood that the injury will be serious.

He adds that the lack of production in many small orchards is due to insufficient spraying and not alone to walnut trees. Commercial growers apply as many as eight or ten sprays per year in order to grow satisfactory fruit. Even a few trees in the home orchard must be protected in the same manner.

Few home orchardists are able to devote this much time to the orchard, consequently the production of fruit suffers.

(Continued on page 25)

Pruning and trimming fruit trees often tests the ingenuity of the farmer. Here Fred Seybold of Hughson, California, reaches the top branches of his peach trees by mounting a home-made platform on his Allis-Chalmers WC tractor. Note the little tool kit fastened to the support rack.

ARE YOU FREEZING AUTUMN FRUITS?

By DONALD K. TRESSLER
Food Consultant

AUTUMN fruits such as peaches, plums and fresh prunes, apples and pears are harder to freeze in perfect condition than some of the earlier fruits because most of them discolor so easily.

This browning (or oxidation) takes place during preparation of the fruit for freezing or when it is thawed for using in pies or for serving as a dessert. Sometimes when fruit is exposed to air in the package, the exposed portions become dark even during the storage period.

When fruit darkens and turns brown, it not only makes it less attractive in appearance, but the fine flavor changes and it then tastes like over-ripe or badly bruised fruit. So it is very desirable to try to prevent browning of the above named fruits.

It has been found that the new enzyme-converted corn syrup, Sweetose White Syrup, retards fruit browning during storage, thawing and serving. What's more, its use seems to result in a firmer, plumper fruit, and it is easier to use than making a sugar syrup to pour over fruit because the corn syrup is merely mixed with water and it is plenty sweet.

Here are detailed steps for freezing your fall fruits with this new sweet corn syrup:

Apples

Select firm winter apples of a variety suitable for pies. Pare, quarter, remove cores and cut into slices about one-third inch thick. Keep pared fruit in a light brine (1 tablespoon of salt per gallon of water) until a quantity has been prepared. Place 3 cups of sliced apples in each quart freezing carton, add three-fourths cup of Sweetose White Syrup. Crush a square of waterproof paper (locker paper or vegetable parchment paper will do) and place on top of the slices to hold them under the syrup. Close container, heat-sealing if necessary; freeze immediately.

To make pies from frozen apples, allow slices to thaw just enough so they can be broken apart. Place partly thawed apples on unbaked pie crust, then proceed with making pie as usual, omitting the addition of any sweetening unless more is desired. Allow 5 minutes longer than the usual baking time to permit slices to thaw simultaneously with the baking.

Applesauce

Pare mature apples, remove cores, quarter and place in saucepan. Add 1 cup of water to each quart of quartered apples. Cook over low heat until apples are soft. Force through a strainer or ricer to remove seeds and fiber. Sweeten to taste with Sweetose White Syrup and allow to cool. Then fill freezing containers to within three-fourths of an inch from top to allow for freezing expansion. Close containers, heat-sealing if necessary; freeze immediately.

Peaches

Select fully ripened yellow peaches, preferably of the Hale Haven, South Haven or J. H. Hale varieties. Dip in boiling water for one minute, then cool quickly in running cold water and rub off peels. Cut fruit in half and remove pits. Place halves or slices of peaches in pint freezing containers, allowing three-fourths inch headroom for expansion. Prepare a heavy syrup by mixing 1 cup of cold water with 4 cups of Sweetose White Syrup and pour over peaches in container until fruit is covered. Each pint container will hold about 6 peach halves of 1½ cups of slices. About one-half cup of the syrup mixture will be needed for pint containers of sliced peaches; the halves will require slightly more syrup. A piece of crushed waterproof paper may be placed on top of the fruit to keep it under the syrup in the container as recommended for apples. Close container, heat-sealing if necessary; freeze immediately.

Pears

Select fully ripe pears, preferably the Bartlett or Anjou varieties. Wash and peel. Place peeled fruit in a light brine (1 tablespoon salt per gallon water) until a quantity has been prepared. Core and quarter and drop quarters in pint containers, filling only 4/5 full to allow for freezing expansion. Prepare a medium syrup by mixing 2 cups of Sweetose White Syrup with 1 cup of water and pour one-half cup of this syrup over each pint container of pears. Close container, heat-sealing if necessary; freeze immediately. (Note: Frozen pears do not retain flavor and texture well; therefore large quantities should not be frozen.)

Muskmelon and Cantaloupe

Select fully ripe fruit, preferably of the Beauty Osage, Bender's Surprise, Golden Gopher, Sugar Rock or Sunrise varieties. Cut soft flesh into one-half to three-fourth inch cubes. Place 1½ cups of the cubes in each pint freezing container; pour 1/3 cup of Sweetose White Syrup over each container of fruit. Close container, heat-sealing if necessary; freeze immediately. (Note: Frozen cantaloupe does not retain its flavor well; therefore do not freeze large quantities.)

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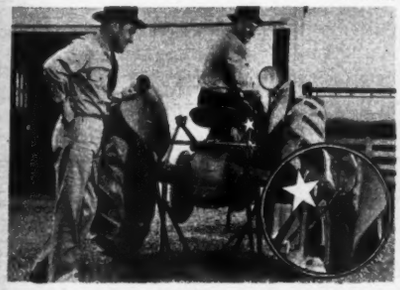

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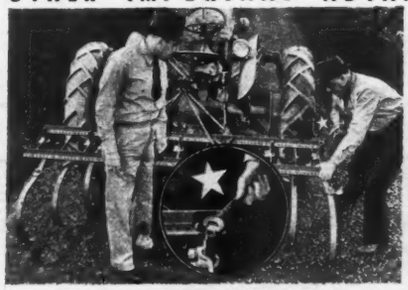

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State NEWS

KENTUCKY—The 1946 strawberry season in Kentucky will long be remembered, due especially to the unheard-of prices which were received. Our larger cooperative associations sold very few under $8.00, probably with the average running better than $10.00, and in the northern Kentucky areas selling from $12.00 to $15.00 per 24-quart crate. Some of us had predicted we would never see the $8.88 OPA price that we received in 1945, and I am personally of the opinion that we will never again see the 1946 price.

The demand for capped berries or stemmed berries for the processor far exceeded the supply, and the price sold from 25 cents to 32 cents per pound, cash to the grower.

The two new strawberry varieties developed a few years ago in Tennessee, known as Tennessee Shipper (No. 148) and Tennessee Beauty (No. 263), made a hit again in 1946. Their unusual firmness certainly was a strong point during the harvest season, for in many of our sections it rained almost every day at harvest season. These berries held up under these continuous rains much better than the Blakemore and Aroma which are our two main commercial varieties in the state. The Tennessee Beauty, a late blooming and late fruiting variety which is almost identical to that of the Aroma, made an outstanding record this year, and indications are that it will replace Aroma as a Kentucky commercial variety.

I will give a more complete comparison on the yields of these new berries in a later issue.—*W. W. Magill, Secretary, Kentucky State Horticultural Society.*

PENNSYLVANIA—"You're never too old to learn." Two 70-year-old "students" in the Fruit Growing Short Course will attest to this statement. Both of them are orchardists, one a Penn State graduate here for his third short course "to find out the modern way of doing things."

The two septuagenarians were among 23 enrolled in the Fruit Growing short course, which opened July 29 and closed August 3. Two wives were sitting beside their husbands in class, and 3 former servicemen were included.

Frank A. Kaiser, of Scranton, graduated from Penn State in 1898, and now is a Lackawanna County orchardist. He and Frank Andrew Westrick, Sr., of Patton (Cambria County), are both 70 years of age. In class with them was 19-year-old Carl W. Brenner, York R.D. 5, the "youngster" of the group.

Others enrolled for the short course were: Mr. and Mrs. Richard B. Bare, Chambersburg, and Donald W. Mort, all of Franklin County; John S. Barton, East Berlin, and James Bert Berry, Ortanna, both of Adams County; Francis Peter Derick, Newburg, Cumberland County; Paul E. Haverstick, Lancaster, and H. Wilbur Heller, Conestoga, both of Lancaster County; Robert Wayne Hayman, Northbrook, Chester County; L. F. Johns, Pottsville, Schuylkill County; Earnest H. Kuhns, Allentown, Lehigh County; Mr. and Mrs. A. H. Rosengarten, Bryn Mawr, Montgomery County; Ralph J. Schultz, Hereford, and John R. Wright, West Leesport, both of Berks County; Clarence J. Susek, New Kensington, Westmoreland County; Christian Henry Waymer, Southampton, Bucks County; John H. Gray, Patton, Cambria County; Charles Thomas-Stahle, State College, Centre County, and James Lloyd Poland, Winchester, Va.

"All I wanna know is — will I live long enough to wear out this B. F. Goodrich tractor tire?"

You can be sure there's long life in *B.F. Goodrich* tractor tires. They're made with tough, long-wearing rubber. They have big, thick cleats in *pairs* . . . double bars for double bite and grip. And the tread is open-center, self-cleaning — mud and trash drop out as the tire rolls. Yes, sir, you can count on a long, happy future with these husky B.F.Goodrich tractor tires. They'll help you work faster, save on fuel, save on time. See the B.F.Goodrich dealer for *all* your tire needs.

An advertisement of B. F. Goodrich — First in Rubber

NEW YORK—The New York and New England Apple Institute appointed L. W. Marvin of Woodstock, N. Y., manager of the organization. He succeeds Thomas O'Neill of Rochester, resigned.

Mr. Marvin has been active in advertising and promotion of perishable crops for a number of years, and was formerly advertising manager of the Florida Citrus Commission.

MICHIGAN—One sprayer manufacturing company has come forth with, as one farmer puts it, "the most revolutionary invention since the Atomic bomb" for the control of insects and diseases. This sprayer is not yet on the market, but is being tried this summer in an experimental way. It is expected to be in production next year.

The drouth we have been experiencing this summer has begun to show its dreaded effects on the blueberry crop and also on our large peach crop. There has been less than one-half inch of rain in our fruit area since June 15. Mulched orchards both young and old have been helped materially by the increased water retaining ability brought about by the mulch system of culture in cherry, apple, pear, and even peach orchards.

The sour cherry crop of Michigan has surpassed all earlier calculations. The cherries have been of superior quality and little or no trouble has been encountered in getting them off. The price has been very good and even with the later ones being dropped at present all growers are confident in receiving at least 11c and it is our belief they will all receive 15c or near that for every pound picked.

DDT is living up to all forecasts; its use has been practically universal in the state. Very few coddling moth are to be found where DDT was used and spraying was done by competent growers. The apple crop in Michigan is about normal with an emphasis on higher quality this year.—*C. A. Langer, Extension Specialist in Horticulture, Michigan State College, East Lansing, Michigan.*

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APPLE AND PEAR GROWERS

Here's what **STAFAST** *can do for you:*

1. **Control premature drop of apples and pears.**
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3. **Help cut windfall losses to a minimum and reduce "knockdowns" during harvest.**
4. **Practically eliminate necessity for spot picking.**
5. **Ease your labor problem by spreading out the picking season.**

Apple and pear growers the nation over have seen convincing "orchard proof" of what Orchard Brand STAFAST, Pre-Harvest Spray can do to control premature drop of apples and pears . . . to hold the fruit on longer for better color, size and flavor. You, too, can profit by the use of STAFAST . . . for maximum results, order STAFAST today.

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ORCHARD BRAND SPRAYS & DUSTS

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Last to be demobilized

DEATH by high explosive stopped a year ago, and people said the war was over. Demobilization came with a rush, but not for the American farmer. Despite four bumper crops that he had raised without adequate help, the battle for food was far from over. Starvation didn't stop simply because of some papers signed in Tokyo Bay.

Today 500 million people face death by starvation. These lives can be saved if food reaches them in time. Food from fertile, productive America remains their main hope—food grown by the American farmer, and carried to shipside by the American railroads.

The amount of wheat alone which the railroads have delivered for export this year is graphic proof of the job these farmers are doing.

During the first four months of this year the railroads carried to shipside more wheat than was ever exported before between January and April — more than *four* times as much as the average for the same period for the last *seven* years!

American farmers and American railroads were working together long before Pearl Harbor.

And they will be working together long after Tokyo Bay—in their common war against hunger.

ASSOCIATION OF **AMERICAN RAILROADS** WASHINGTON 6, D. C.

IN PARTNERSHIP WITH ALL AMERICA

REMODEL OLD BUILDINGS

(Continued from page 9)

at conveyor level is very handy for moving fruit in and out of storage as it may be left open for long periods with only small loss of refrigeration.

Whenever it is possible to use insulating board as sheathing, it is highly recommended as its insulating properties add to the overall insulation of the building with no additional cost. It may be used in refrigerated storage rooms equipped with blower units as no water can remain long condensed on interior surfaces of rooms with air movement from such cooling units.

Free Standing Wall

In many cases, especially with bank barns where wooden studs must be erected against the masonry walls, it is practical to erect an inside free standing wall of inexpensive tile. This gives a fire-proof construction and since the curtain wall bears no load, it need not be tied into the outside masonry wall.

An upstairs room in a barn may be easily insulated with loose-fill insulation between 2 by 6 studs and 2 by 10 ceiling and floor joists. In remodeling a building an effort should be made to secure as high ceilings as possible, tight (vapor-proof) construction on the outside of the insulation only, ventilation for the timbers when at all possible, either to the inside or the outside, and above all, keep the costs down as an expensive remodeling job would often cost as much as moderate cost new construction.

New Bulletin on Pectinols

The most recent and up-to-date information on the pectinols, special enzymes which aid in processing fruits, has been compiled by Rohm & Haas in a new bulletin just issued.

The publication contains a description of the functions performed by these pectin-removing enzymes and suggests applications so far only partially explored.

It also suggests uses of the Pectinols in the preparation of a wide variety of fruit products such as juices, wines, vinegars, syrups, concentrates and jellies.

Pectinols destroy pectin by hydrolysis. They do not affect other materials present, and do not add to or detract from the flavor or color of the natural product. They are simple to use, requiring little or no additional equipment, and can be added at various stages in the processing of the fruit. Copies may be secured by writing Rohm & Haas Co., Washington Square, Philadelphia, Penna.

PREVENT PRE-HARVEST DROP

An apple on the tree is worth a bushel on the ground . . .

SPRAY OR DUST FRUITONE for the best possible control of pre-harvest drop. Fruitone keeps the abscission layer green, holds apples and pears on the trees until they have reached full maturity, size, and color.

For only about 1c a bushel, you get more fruit, of better color, size, and quality; more time to pick; and worthless windfalls will be reduced to the minimum.

For best results it is important to spray Fruitone at the right moment. To help you decide when spraying should be done we have prepared a comprehensive maturity schedule for most varieties of apples and pears. Get your free copy of this schedule *now*. Mail the coupon below.

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QUICK FACTS

FRUITONE for spraying comes in 12-lb. cases. **FRUITONE** for dusting comes in 50-lb. bags.

1 lb. Dust Fruitone gives same coverage as 10 gals. of Spray Fruitone. ½ lb. Fruitone makes 100 gals. of spray, enough to cover ten average 10-year-old trees, or five average 20-year-old trees.

10 lbs. Dust Fruitone covers ten average 10-year-old trees, or five average 20-year-old trees. Order your supply NOW!

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Please send me your maturity schedule at once. I have_____apple,_____pear trees, most_____years old. I use spray ☐ dust ☐

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ORCHARDS THRIVE ON LEGUMES

A good legume or grass-legume cover crop in the orchard does three things: 1—Prevents erosion, 2—Supplies organic matter, 3—Grows nitrogen. Legumes are heavy feeders on potash. Make sure in fertilizing your cover crop that you apply enough of this plant food to provide for a heavy stand and vigorous growth of legumes. In this way the trees will get potash, which they use in amounts about equal to nitrogen.

Consult your agricultural adviser about the fertility of your soils. Then see your dealer about a fertilizer that will supply enough potash to supplement what your soil will make available.

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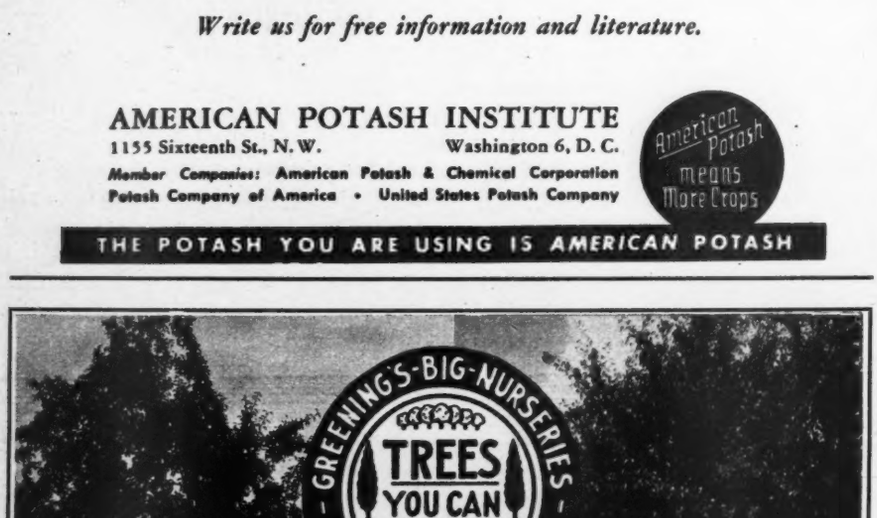

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BUILDING A COLD STORAGE

(Continued from page 10)

and cold air. In any refrigerated room, therefore, we have a circulation of the air, either natural or artificial. Gravity circulation is slow and is likely not to be uniform in all parts of the room.

To remove heat from a storage room held near the freezing point of water the cooling medium must, of course, be colder than the room. This means that the refrigerant must evaporate in the cooling coils at a temperature below 32°. As the warmer air of the storage room comes in contact with this cold surface moisture is frozen from the air and forms ice upon the evaporator coils. Some of this evaporates back into the air of the storage room but any of the water resulting from the melting ice that is drained from the room is, of course, lost.

The important point in securing good relative humidity conditions is to have a large and well balanced evaporator. The "colder" the coils are operated the more ice is formed upon them and the more moisture is removed from the air of the room which must be made up largely by moisture extracted from the fruit. One can readily understand that if a given amount of coil surface was required to cool a room using a refrigerant temperature of, say 15° F, the refrigerant could be carried at a much higher temperature and yet remove just as much heat from the room if the coil surface area was doubled. This is the engineering principle used to secure adequate cooling and yet make it possible to hold a high relative humidity. Instead of using a small amount of cooling surface which must be kept very cold, a larger surface is used so that the temperature of the evaporating refrigerant may be carried only a few degrees lower than the room during the holding period. Then the amount of moisture frozen out on the pipes is much less and the relative humidity may be held much higher.

The correct practice, therefore, is to use a sufficiently large evaporator so that a relative humidity of at least 85% may be maintained during the holding period. The experienced engineer determines the evaporator surface necessary to secure the proper cooling effect at a low temperature differential. This temperature differential, the T. D. factor that enters so importantly into all refrigeration load calculations, is the difference in temperature between the refrigerant in the evaporator and the temperature of the storage room. Having determined the permissible

temperature difference he selects an evaporator or a group of evaporators with the proper capacity to accomplish this. He then selects a compressor of the right size to balance the evaporator requirements. Often two compressors are cross connected so that either or both can operate with the evaporator. During the pull down period both may be used but during the holding period only one will be needed. This permits flexibility and economy of operation.

Keep T.D. of 10° F.

Usually a T. D. of about 10° F. may be maintained during the holding period with blower type cooling units. This is about as great a difference as will permit good moisture conditions in most types of installations and a smaller T. D. is preferable. Gravity systems require a much wider T. D. to set up a natural air movement. This is one reason for the difficulty of securing optimum moisture conditions with gravity systems.

Failure to provide a sufficiently large evaporator may arise from several causes. To do so, of course, means larger coils or cooling units, with additional space consumed and a higher initial cost of the equipment. Frequently, on competitive jobs, engineers keep the evaporator surface small in order to keep the cost as low as possible. A few dollars or a few hundred dollars "saved" in this way, however, may mean an unsatisfactory storage. The difference in cost between adequate and undersized equipment is only a few cents per bushel of capacity and it is money well spent. An orchardist would do well to be sure the man who designs his storage understands the vital importance of this relationship.

Need Ample Coil Surface

Adequate evaporator surface not only makes for good humidity conditions but improves operating practices all the way along. The cool down period can be shortened. If ample coil surface is provided it is possible to operate with a "colder" refrigerant during the first few days or weeks when warm fruit is being stored and when moisture conditions are not so important. Then during the holding period the refrigerant can be allowed to evaporate at a much higher temperature. This can be accomplished by variable speed motors to operate compressors at different capacities or by the use of multiple compressors as mentioned above.

Dry coil evaporators that are too

(Continued on page 22)

HYATT MADE IN U.S.A.
Rollers Roll—
AND EQUIPMENT LIFE IS EXTENDED
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CHAMPION SPARK PLUGS

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TELEGRAM Indianapolis, Ind., May 30, 1946

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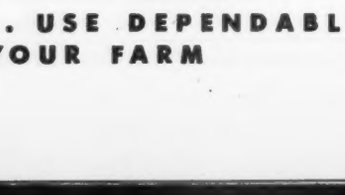
GEORGE ROBSON

Once again Champions were proved champions in fact as well as in name in the 1946 Indianapolis 500-Mile Race. The winning car, the first six to finish, and nine of the ten money winners used Champions. In the last nineteen races, eighteen winners and 177 out of 190 cars finishing in the money were Champion equipped. Champions are also the overwhelming favorite with farmers, irrefutable evidence that Champions are the choice of experts.



FOLLOW THE EXPERTS . . . USE DEPENDABLE CHAMPIONS ON YOUR FARM

BUILDING A COLD STORAGE

(Continued from page 21)

small for the job experience troubles from excessive ice formation on the coils, necessitating frequent shut down periods for defrosting. This usually means poor temperature control and unsatisfactory relative humidity. If the amount of evaporator surface in the unit is adequate or if more units are used in the room and operated with the refrigerant at a higher temperature these troubles can be overcome.

Relative Humidity

A more or less erroneous idea exists that "wet coil" units tend to maintain better relative humidity than other coolers. The fact that the air passes through the brine spray does little to improve the moisture conditions if the installation is improperly engineered. If the evaporator area within the cooling unit is so small that a very cold refrigerant must be used moisture will be "frozen out" of the air the same as with other types of cooling devices. The only difference is that the brine removes the ice from the coils as soon as it forms. That moisture is removed from the air can be demonstrated by the fact that the brine, through which the air passes, is constantly being diluted so that salt must be added at intervals to keep the concentration of the brine above the freezing point. When the coil area in such a unit is adequate the brine is diluted very little. Excessive dilution during the holding period, usually means poor moisture conditions in the room.

Efficient Insulation

Efficient insulation is an important contributing factor to satisfactory moisture control. As with refrigeration machinery, the cost of good insulation over substandard practices may be but a fraction of a cent per bushel of capacity. This difference in cost is likely to be expended many times during a ten year period in increased operating expenses.

In the near future there may be considerable remodeling or increasing the size of storages now in operation. This may lead to trouble if such changes are not properly made. Some plants have equipment of such characteristics that it would be possible to add sufficient evaporating surface to cool another room and yet maintain a balanced condition between the compressor and the evaporating surface. In other installations such a procedure would throw the equipment off balance and bring about conditions leading to poor

relative humidity as described earlier. If additions are contemplated be sure that they can be accomplished without violating good engineering principles.

Under many conditions it would be best to install a completely separate refrigeration unit when a new room is added. The small, self-contained, modern units are very adaptable to such a plan. This also provides a more flexible storage. Some seasons the extra space may not be needed. Perhaps in some poor crop years that are sure to come the small storage may be all the space that is needed.

Most fruit growers would do well to take their storage problems to a refrigeration engineer experienced in fruit storage installations. His advice should be worth his charges and his responsibility is to guarantee effective storage conditions. This in no way contradicts the advice given at the beginning of this discussion to the effect that the fruit grower should learn as much as possible about the refrigeration process. He will have ample use for all the knowledge he can thus acquire in caring for his equipment and in the efficient operation of his storage in the years that follow.

Free Land Offered To American Citizens

ECUADOR, South America, has set aside 124,000 acres of rich land for colonization by American and British citizens.

The land is on the lower western slope of the Andes at an elevation over 1000 feet above sea level. This land is free to all approved settlers of the United States and Great Britain, by Presidential Government Decree.

The prospective settler is required to show that he is in good health and can comply with the reasonable requests of the government. A small legal service fee will be charged.

Each settler complying with government conditions may homestead about 124 acres, and will receive 2000 square meters of extra land in the village site.

Inquiries should be addressed to Dr. J. M. Sheppard, Official Government Intermediary, P. O. Box 315, Quito, Ecuador, S.A. A loose U. S. postage stamp should be enclosed for reply.

Jim Brown's Farm and Home Fence Handbook reviewed last month was reported to sell at 25 cents. It is offered free. Write the AMERICAN FRUIT GROWER for a copy.

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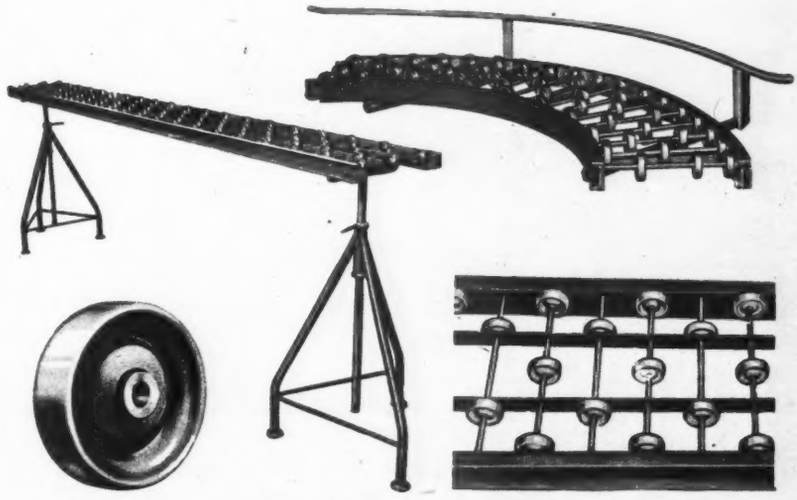

These strong, moderately priced sections are available in 5′ and 10′ lengths, and with 8, 10, or 12 wheels per foot. 45° and 90° Curves and attractive Tripod Supports are standard accessories. The Type 115 Wheel is of the highest quality, the result of 40 years of Mathews experience in conveyer bearing and wheel manufacture. Universal Couplings make sections easy to set up and take down. New bulletin and prices available immediately upon request.

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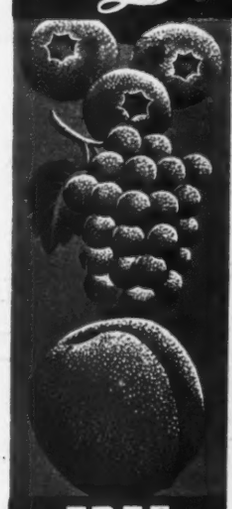

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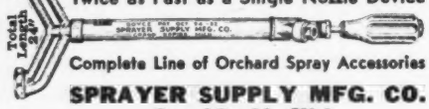

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RAT CONTROL

(Continued from page 11)

with between 25 and 30 pounds of Dry Ice per 1000 cubic feet. As the size of the room is increased the amount of Dry Ice per 1000 cubic feet necessary to secure a given concentration is reduced. The amount recommended may be reduced somewhat dependent upon the amount of space occupied by fruit.

Vaseline Makes Seal

However, since the amount of Dry Ice used in our tests would involve an expenditure of only about ¼ cent per bushel, we do not feel that less Dry Ice should be used, at least until we have more data on which to base a recommendation. The tightness of the storage room will have an important bearing upon the ease with which concentrations are maintained. We have found common vaseline very helpful in sealing the gaskets of doors. Spread on newspaper, vaseline will make a very cheap and effective seal over cracks and small openings.

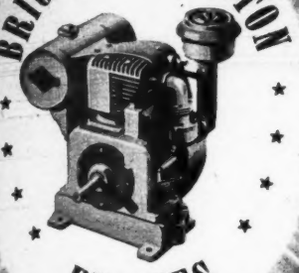
Our practice has been to prepare for the gas treatment in the afternoon by sealing cracks and doorways other than the one to be used by the operator. Dry Ice in the required amount is secured in 50 pound cakes and distributed along the middle of passageways throughout the storage. Since the Dry Ice is very cold (110° F. below zero) it should not be placed in contact with fruit and should be handled with ice tongs or very heavy gloves.

Break Dry Ice Cakes

When all is in readiness, the cakes of ice are broken into several pieces with a hatchet or heavy machine hammer starting with the cakes farthest from the door. When all cakes are broken and the electric fans are turned on close the final door and seal the edges with vaseline. In the morning the doors can be opened and after a half hour or less the room will be sufficiently aired that men can work in it. If you don't need to work in the room, it may be kept closed and the gas will gradually dissipate with no ill effects to the produce.

Experiments in progress indicate that this treatment with carbon dioxide will be very helpful in controlling storage scald. If this should prove true the control of scald and rodents could be accomplished in one operation. A simple gas analysis apparatus to measure the concentration of carbon dioxide being secured will cost but a few dollars to build and can be operated by any storage operator.

BRIGGS & STRATTON



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NATIONWIDE FRUITS

(Continued from page 13)

JAM

Put Rush Work in Storage

Putting into freezing storage a part of the rush work of caring for fast-ripening fruit—along with the fruit itself—is a prospect for commercial jam makers who put to work results of U. S. Department of Agriculture Research at the Western Regional Research Laboratory. One gain would be a longer season for the jam factory and steadier employment.

For years now, jam makers have been using frozen fruit packed with sugar, but this has called for considerable preliminary preparation at the peak of the rush season. The new method detours this labor bottleneck and uses fruits such as peaches and apricots which are frozen quick and hard just as they come from the orchard, and are kept frozen until a convenient time to make the jam. Packing the frozen fruit in heavy paper bags or in plywood bins that are almost airtight helps prevent loss of moisture. This quick-freezing method offers to commercial preservers an effective way of avoiding discoloration of the fruits that turn brown at normal temperatures when exposed to the action of oxygen in the air.

A day before it is to be processed, such fruit is transferred from sub-zero storage to a plus-20-degree room and allowed to warm to about 20° F.—still 12 degrees below freezing. At 15° the fruit is still too hard to cut, but at 20° it can be halved, pitted and pared.

For peeling at 20°, the researchers developed a new trick. Dipping this frozen fruit in *cold* water has about the same effect in loosening the skin as dipping fresh fruit in boiling water or exposing it to live steam. This makes peeling quick and easy and the cold still protects the fruit against oxidation. The peeled and pitted fruit can be submerged in sugar sirup to thaw or defrost, and the sugar keeps the oxygen away. From the sirup the fruit goes to the kettle. The pitting, peeling, and submerging in sirup must go quickly—before the fruit defrosts.

Fruit frozen direct from the orchard can be handled thus, defrosted in sirup and used as a fresh raw fruit for dessert, or for sauce or pies. The method is more practical for jam or preserve makers than for canners. Freezing softens the fruit too much for canning.

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DEPENDABLE FRUIT AND NUT TREES, SMALL fruits, Ornaments, and General Nursery Stock Combined catalogue and Planting Guide free. CUMBERLAND VALLEY NURSERIES, INC., McMinnville, Tennessee.

STRAWBERRY PLANTS; BLAKEMORE, KLONDIKE, Missionary, 100—$1.75; 1000—$8.75; Gem, 100—$1.75. "Giant Pansy" 5 inch blooms, 100—$3.00. All Postpaid. DELTA NURSERY, Jackson, Miss.

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POSITION WANTED WITH NURSERY OR FRUIT farm by Young woman having 1946 B.S. degree, majoring in horticulture. ELEANOR THOMAS, Springfield, South Dakota.

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WILL PAY $5,000.00 each for certain old books; Histories $300.00. Poems $200.00 and Songs. Catalogue 10c. OHIO HISTORICAL PUBLISHING CO. AF9G, 209 W. 11th Avenue, Columbus, Ohio.

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BOOK REVIEWS

Into the Freezer—and Out
By Tressler—Evers—Long

This book is designed for individuals who freeze and store food in a home freezer or in a locker plant. Price is $2.50—send your check or money order to the AMERICAN FRUIT GROWER.

Step by step procedure is outlined for vegetable, fruit, juice, and practically any other thing that can be frozen.

Information on budgeting freezer space to meet individual needs is given for freezers with capacities from 4 to 24 cubic feet.

Best Varieties

Detailed information is included on the best varieties for freezing, as well as the proper containers. Also practical information like what to do in case of power failure, how to thaw frozen foods, and recipes for the frozen foods.

A special section is given to sportsmen in the chapter on wild game meat and fish, including instructions for preparing the carcass for freezing.

Fruit Publication

"Fruit Varieties and Horticultural Digest" is a quarterly published by the American Pomological Society and is devoted to the discussion of new and old varieties and how they are faring in various sections of the country.

The publication will serve as a clearing house for new variety and orchard information of general interest. It is sent to all paid-up members of the American Pomological Society. Those desiring to receive the publication may do so by sending the $1.00 subscription fee to the bulletin, c/o Dr. Wesley P. Judkins, Editor, Wooster, Ohio.

Farm Equipment Financing

A booklet called "Farm Equipment Financing by Banks" has been published by the American Bankers Association to meet the demands of a large number of country banks planning to extend their lending services to farmers.

The manual contains the results of a study of the most practical methods and operating procedures for farm equipment financing. It covers the financing of the dealer's inventory as well as the retail financing of machinery and equipment bought by the farmer. Copies are available from the Small Business Credit Commission, American Bankers Association, 12 E. 36th St., New York 16, N. Y.

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From where I sit ... *by* Joe Marsh

Thad Phipps and the Garden Party

Thad Phipps' wife finally got him to the Ladies' Flower Club Lawn Festival and Garden Party.

At first Thad was mighty uncomfortable in his stiff collar, making polite conversation with the ladies, nibbling on watercress sandwiches. Until Milly Harztell comes up with a tray of ice-cold beer in frosty glasses.

"I suppose," says Milly slyly, "you'll think beer's a sissy drink." "Sissy drink!" says Thad emphatically. "Just because it's mild and moderate doesn't make it sissy! Beer's a man's drink!"

And then Thad sees that half the ladies there are sipping beer—along with the others who've chosen lemonade and cider—and he mutters: "I reckon it's a ladies' drink, too."

From where I sit, more and more people are realizing, like Thad, that beer doesn't belong to any special group or occasion—it's a wholesome American beverage that belongs wherever folks enjoy good taste and moderation.

Joe Marsh

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Ramblings OF A HORTICULTURIST

Hand sorting of oranges in a Palestine orchard today. Long, hard work has transformed the sandy soil of the Biblical land into great fruit orchards which market three million crates of oranges a year.—Swift News Photo.

Fruits of the Ages

APPLE to the ancient Egyptian meant something quite different from what it does to you or me. When he used the word Tappauch (his word for apple), he might have been referring to any one of four fruits; the apricot, quince, orange or the citron. Any one of these fruits, or all of them, could easily have been the "golden apples" of the Bible.

Linnaeus, the noted Swedish botanist of the eighteenth century, suggested a survey of the flora of the region of Palestine. He recognized that the vegetation of this particular part of the world was different from most others, particularly Europe which he knew intimately. The discoveries, studies and investigations of this great systematic botanist and his co-workers have given us much of our present knowledge of the fruits and other plants of this ancient part of the civilized world.

Since the climate of the Palestinian area is not suited to the culture of our common apple (Malus sylvestris), most authorities agree that the apricot (Prunus armeniaca) is the "apple" frequently referred to in Biblical literature.

The introduction of the apricot into this country is obscure, but apparently it was by the Mission Fathers, for in 1792 Vancouver found it growing at the Santa Clara Mission in California. Today the apricot is grown in all parts of the world where the peach will survive.

Had you walked through the market places of ancient Rome you no doubt would have seen quantities of the "apple of Cydon" or Mala Cydonia, as the fruit was frequently referred to. We know this fruit simply as the quince (Cydonia oblonga). They probably used the fruit in much the same manner as we do, in preserves and marmalades. In Persia and the Near East it is even esteemed when eaten raw.

The word citrus is an ancient name referring to the wood of a fragrant tree of Africa. But since then it has come to refer to small evergreen trees or shrubs that are more or less spiny. The ancient peoples of the warm Mediterranean region were well acquainted with two members of this large group of sub-tropical plants, the sour or Seville orange (Citrus aurantium) and the citron (Citrus medica).

The sour orange is not grown for fruit production in the United States except for very limited use. It is still being grown in Egypt, Palestine, Spain and other Mediterranean countries. The citron is grown extensively at present on the island of Corsica. Large quantities of the peel have in the past been shipped in brine to this country to be candied. The citron is cultivated in a small way in the southern portions of the United States.

The pomegranate (Punica granatum) was an important food of the ancient inhabitants of the Mediterranean region. It also served as a motif in artistic design, and perhaps they used the bark of the root for medicinal properties as the people of that area do today. Supposedly the pomegranate was introduced into southern Europe by the Carthaginians. It was described by Theophrastus three hundred years before the Christian era and later it was listed by Pliny as one of the most valuable fruits. When the Israelites journeyed from Egypt into the desert, they began to complain of the good things left behind, and among them was the pomegranate.

The date palm (Phoenix dactylifera), was to the ancient Egyptians a sign of the presence of water. The stems and leaves of the date palm were used as designs for the decoration of Solomon's Temple. The walls of the house were adorned with carved figures of cherubim and palm leaves. Hence the prominent use of palm leaves in our Churches and Temples today, particularly at Easter time. The large leaves are used today as they were in ancient times to cover the houses in Syria, Egypt and neighboring regions.

The date is one of more than twelve hundred species of palms known to the world and at present is the only one under commercial cultivation. For more than four thousand years the date has been a valuable food for the inhabitants of the region of the Tigris and Euphrates Rivers in southern Asia.

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To most effectively meet the needs of American Industry, Union Pacific provides a fleet freight cars specifically designed to transport all types of materials and merchandise.

These include the Refrigerator (P.F.E.) Cars, Livestock Cars, Hopper Cars, Automobile Cars with special loading device, Tank Cars, Gondolas, Flat Cars and Box Cars.

Sturdily constructed and efficient in operation, this safe, dependable rolling stock is a vital factor in providing transportation for the commerce of the nation.

Of special interest to the Fruit Industry is the refrigerator (P.F.E.) car. In January, 1946, Pacific Fruit Express Company was authorized to obtain 2,000 new refrigerator cars at a cost of 12 million dollars.

The trained knowledge and experienced skill of thousands of Union Pacific employees keep shipments rolling on schedule over the time-saving Strategic Middle Route, uniting the East with the West Coast. Experienced traffic specialists, from coast to coast, are ready to assist you. Let them help you with your *next* shipment.

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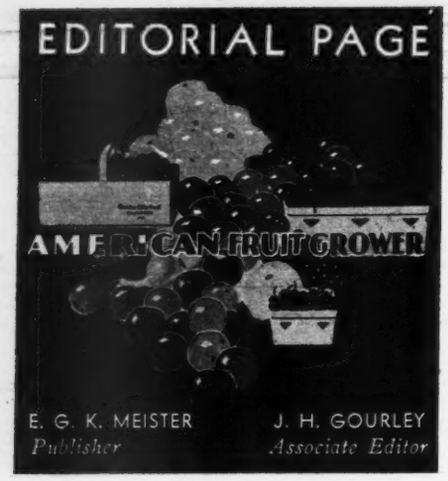
The Strategic Middle Route



This Year's Fruit Crop

This year's deciduous fruit crop is estimated about one-tenth larger than last year, and a little larger than the average crop by the United States Department of Agriculture.

Peach and pear crops are well above average, coming near last year's record crops. Cherry and apricot crops are said to be well above both last year and the average. Commercial apple production is well above last year's record low, but below average slightly.

The fresh plum crop promises to be large, and the prune crop looks smaller than last year. The June 1st condition of California grapes suggested not quite as large a crop as the 1945 near record one, with the outlook for raisins less favorable.

Barring unforeseen circumstances with material supplies and labor, commercial packings of canned fruit will be considerably larger this year than last, and dried fruit packings will be about the same.

Refrigerator Cars

The Union Pacific Railroad, the Southern Pacific Railroad, and the Association of American Railroads have announced new moves in the field of refrigerated equipment.

The Union and Southern Pacific roads have ordered new equipment for delivery in 1947 that will bring their total fleet of refrigerator cars up to 41,000 through their jointly owned Pacific Fruit Express Company, already the largest fleet in the world.

The Association of American Railroads is now engaged in an extensive two-year research program to develop a standard all purpose car for the more efficient and dependable transportation of perishables. They have the cooperation of the U. S. Department of Agriculture, the Interstate Commerce Commission, refrigerator car lines, shippers, and the United Fresh Fruit and Vegetable Association.

Apple and Peach Ceilings

The OPA has been given another year to play around with the price structure of the national economy, and the immediate effect has been felt by the apple and peach industries. A ceiling has been placed on these fruits, with the Secretary of Agriculture controlling them, along with all other food product ceilings.

Peaches and apples both sold well below the present ceilings during the suspension period, and growers are now concerned less the retailer may hold prices up to the ceiling and retard movement of fruit into the customers' hands.

Because the peach crop is a bumper one, it is expected that Secretary Anderson will remove the ceilings as requested by the National Peach Council. However, the apple crop is a little on the short side, and it is not expected that he will remove the ceiling on apples so readily.

Reach the Consumer

Several articles in a recent issue of the AMERICAN FRUIT GROWER stressed the importance of reaching the consumer. The buyer of fruit has to be reached before buying, while buying, and after he has bought.

Before buying, a housewife can be reached through the women's page of the daily page with recipes, and the feature section with general articles about fruit.

These can be tied in with advertising campaigns in the local papers, and can be the result of circulars released through the growers' organizations.

Pamphlets and brochures should be enclosed with packaged fruit. These should explain the variety bought—is it an eating variety, a canning variety, or a baking variety? What can the housewife do with this package of fruit she has bought?

The Credit Belongs to Mary

How often fruit growers have modestly said "The credit belongs to Mary." In this postwar era the wives of fruit growers have been carrying many extra burdens.

In overalls helping with the spraying, or in gingham taking care of the roadside market, or on an errand picking up badly needed repair parts, the woman of the fruit farm keeps things going.

In the purchase of a power sprayer, tractor, truck or farm implement, the fruit grower's wife is frequently the financier and so today with money in the bank the fruit grower says "the credit belongs to Mary."

Thumbs Up

Ye flowering banks o'bonnie Doon,
How can ye blume sae fair!
How can ye chant, ye little birds,
And I sae fu' o' care!

THERE ARE many hazards in the fruit business, always have been, always will be, as in most other businesses. But they are peculiar hazards in orcharding. A freeze or two may wipe out the income for a year. So also a hail storm, a sudden attack of insect or disease, a serious mistake in a spray application. The hurt lasts so long; a year.

Well, it is time to take inventory of one's philosophy, for without a long range viewpoint and long range bank reserve the grower might find himself insolvent.

The apple industry, as a whole, is probably in a more wholesome condition today than for a long time. It has gone through its major reduction in order to balance production and demand. Additional plantings must be made as soon as nursery stock is available to offset additional losses from old trees, orchards on unfavorable sites and obsolete varieties.

Over and over again in these columns the matter of diversification of income in some form or other has been stressed. Certainly this does not apply to all cases but would be a life saver to many in years of disaster to the one-crop orchardist.

And, if there has ever been a lesson in the value of a favorable site, it has been in 1946, as well as in 1945. Fortunately we can learn from such experiences and remove certain hazards in the future. It is worth a trip through the orchard districts to see just how important elevation, nearness to water, air drainage, and other features of a good site really are.

In addition to these matters, the economics of the case are always before us. Low cost of production is a matter for continual study for only the wealthy hobbyist can afford to put more into a bushel of apples than he gets for it. War prices will not be with us always and extravagant cost of production cannot be justified. It is time to put excess profits into improvements in the enterprise and get ready for less prosperous times.

Those who have lost extensively in the spring freezes have the fullest sympathy of all. It is truly a rare occurrence, for the partial loss of a crop does not usually occur more often than once in ten to fifteen years unless the site is particularly unfavorable.

But so far as the fruit industry is concerned, and without glossing over facts or playing Pollyanna, we can say "thumbs up"; plan wisely; go ahead.

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Watch *Where* You Walk—Watch *How* You Drive

Near Bridgeton, New Jersey, Seabrook Farms...a mammoth 30,000 acre "food factory"... annually grows, freezes, cans and dehydrates millions of pounds of garden foods. In such a huge, complex operation, transportation is vital. And only one means of transport... the motor truck... can do the job.

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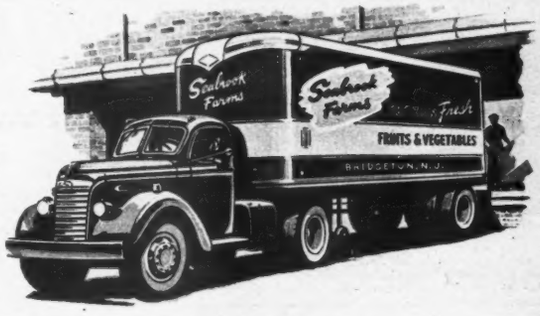

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Not fruit trees that require long years of patient waiting—but young-bearing varieties grown by our special grafting method and direct-in-line propagation until now the earth gives forth its treasures years sooner.

Not delicate trees that grow only in special places—but trees selected so they thrive almost everywhere that usual farm crops grow.

New Book of World's Champion Fruits Tells How Easy

LUTHER BURBANK
The new fruit creations of Luther Burbank, World's Horticultural Wizard, are propagated, sold exclusively by Stark Bro's.

This magnificent book, an art treasure as well as the master book of horticulture, tells how simple it now is to grow prize fruits, shrubs, and roses. Color photos of living fruit make selection easy. Simple directions make growing simple and easy. Send now for this gorgeous 72-page guide (over a foot long) to home fruit growing. This De Luxe book sent FREE, while they last.

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This is America's opportunity to replace ordinary fruits with miracle fruits of Burbank and Stark—Stark Golden Delicious (Trade-mark), supreme in young and heavy bearing! Glorious new Queen of Quality of all yellow apples—unequalled in richest, juiciest flavor. The magnificent new Starking (Trade-mark)—King of all Red apples—red all over weeks before ripening. The new Scarlet Staymared—Stark's U. S. Patent—a solid, blazing double-red Stayman Winesap—coloring twice as red as old Stayman! Jonared, the gorgeous new Stark U. S. Patented "Double-Red" Jonathan. See the new Halberta Giant (U. S. Pat.) Peach, an enormous mid-season producer. The world's largest peach, some weigh 1 lb. each! All exclusive new varieties sold ONLY by STARK. Also hundreds of other famous Stark fruit trees, shrubs, and roses . . . all true-to-name and true-to-strain, and safe arrival guaranteed.

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